

REMARKS

Applicant's invention comprises a computer system having storage devices that can perform autonomous operations among themselves with no external intervention. Unlike the prior art, the storage devices are capable of self-initiating tasks between each other, and cooperating with the other storage devices without involvement or cooperation of a host or other data subsystem controller. Page 1, paragraphs 7 and 8. To do this, each storage device has its own "lateral storage director" (LSD) that allows the LSDs to operate and communicate directly with each other over the communications link without requiring involvement of or communication with an overall storage controller or a host.

In contrast, both Applicant's Background of the Invention (BOI) and the cited primary reference to *Smith* describe systems having disk drives that cannot operate independently of a host, overall RAID controller, etc. With respect to the BOI, Applicant's specification and prior art Figure 2, clearly describe and show that drive 200 does *not* have an LSD (p.9, line 4; and p.10, line 2). The interface 204 is not an LSD, rather it is a common "SCSI bus or a Fibre channel" (p.9, lines 7-8). Moreover, drive 200 is "a slave to the host" and "does not initiate communication with the host or other disk drives." Paragraph 32.

Similarly, *Smith* has a RAID 10 (Figure 1) having drives 16 that communicate with RAID controller 14 via bus 20, or with server 12 via path 22. However, *Smith* is absolutely silent about communications between the drives 16 themselves, and certainly does not show or suggest any ability to "self-initiate" or coordinating the functions of the drives independently of the controller 14 or server 12. Page 3, paragraph 28; page 4, claims 1, 14, and 19.

The third cited reference, *Swidler*, is limited to an "automatically configuring storage array" that sequentially records a data stream on a series of storage devices. Col.5, lines 11-18.

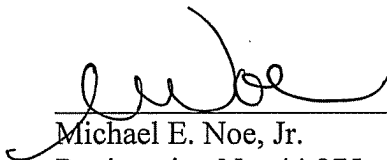
Importantly and like the other references, the storage devices are *not* independently communicating with each other *separately* from a storage controller—every one of their operations requires interaction with the storage controller.

Accordingly, the claims have been amended to further distinguish the cited prior art. Independent Claim 22 now requires the LSDs of the storage devices to "operate and communicate directly with each other over the communications link without requiring involvement of or communication with the storage controller or host such that the plurality of storage devices self-initiate tasks independently of the storage controller and the host." This autonomy of Applicant's storage devices is not shown or described in any of the cited references. Moreover, there is no teaching or suggestion in any of those references to make their respective drives autonomous. Thus, Applicant's invention is neither anticipated by nor obvious with respect to the references.

Dependent Claim 25 further requires the LSDs to "accept queries directly from other ones of the LSDs via the communications link without involvement of the storage controller or the host, and the LSDs transfer data files directly to other storage devices that are not equipped with LSDs such that the LSDs issue host emulating commands." Support for these elements is found in Applicant's specification at page 1, paragraph 12. Thus, not only do Applicant's storage devices communicate amongst themselves, but they can also perform some host functions to conventional storage devices. Independent Claim 29 further distinguishes the references by incorporating many of the elements of the preceding claims.

It is respectfully submitted that the application is in condition for allowance and favorable action is requested. The commissioner is hereby authorized to charge any additional fees that may be required to **Hitachi Global Storage Technologies' Deposit Account Number 50-2587.**

Respectfully submitted,



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